

Newborn Apgar score related to teen school performance

July 26 2011, by Deborah Braconnier



Credit: CDC.gov

(Medical Xpress) -- According to a new study published in *Obstetrics and Gynecology*, the Apgar test which is given to newborns one minute and five minutes after birth to evaluate their health is also an indicator of how they may perform in school when they are teenagers.

The Apgar test grades the infant's breathing, heart rate, skin color, muscle tone and reflex irritability based on a 10 point scale, with each standard contributing two points. A score of eight or above is considered good health. It has been used to evaluate infant health since first developed in 1952 by Dr. Virginia Apgar.

Led by Dr. Andrea Stuart from Central Hospital in Helsingborg, Sweden, the researchers looked at 877,000 children and compared their Apgar scores at birth with their school performance and graduation rates

as [teenagers](#). Of the children studied, the majority had a score of nine or 10 with one percent below a score of seven. Out of those scoring below seven, one-third had a score below four.

The researchers discovered that infants with an Apgar score of seven or below had twice the risk of [special education](#) requirements due to cognitive deficits. They noted that one in 44 of the infants with low Apgar scores were enrolled in special education of some kind but that the others were able to perform just fine. These chances of special education, the researchers stress, are not high enough for parents to be concerned if their child has a low Apgar score.

The researchers stress that while this study shows that a low Apgar score, or the medical conditions that may have caused the low Apgar score, may be related to later performance in school, the Apgar score should not be looked to as a prediction of a learning disability. They believe the real connection is in which conditions, such as preterm delivery or infections, caused the low Apgar score and which ones may be affect brain function later in life.

More information: Apgar Scores at 5 Minutes After Birth in Relation to School Performance at 16 Years of Age, *Obstetrics & Gynecology*: August 2011 - Volume 118 - Issue 2, Part 1 - pp 201-208.
[doi:10.1097/AOG.0b013e31822200eb](https://doi.org/10.1097/AOG.0b013e31822200eb)

Abstract

OBJECTIVE: To estimate the association between an Apgar score of less than 7 at 5 minutes after birth and long-term cognitive function.

METHODS: A linkage between the Swedish Medical Birth Registry and the Swedish School Grade Registry was performed. All singletons born from 1973 to 1986 after 36 6/7 weeks of gestation to Swedish-born women were included. Fetuses that were stillborn, newborns who had

congenital malformations or were small for gestational age, and children who died or emigrated before 16 years of age were excluded from the analysis.

RESULTS: The study included 877,618 individuals in the analysis. Newborns with Apgar scores less than 7 at 5 minutes after birth showed a significantly increased risk of never receiving graduation grades, presumably because they went to special schools because of cognitive impairment or other special educational needs (odds ratio 1.93, 95% confidence interval 1.75–2.14). One out of 44 newborns (numbers needed to harm) with an Apgar score of less than 7 at 5 minutes after birth will go to a special school because of the antenatal or perinatal factors that caused the low Apgar score. Nearly all school children who had Apgar scores of less than 7 at 5 minutes after birth showed an increased risk of graduating from compulsory school without graduation grades in that specific subject or receiving the lowest possible grades and were also less likely to receive the highest possible grade.

CONCLUSION: An Apgar score of less than 7 at 5 minutes after birth is associated with subtle cognitive impairment, as measured by academic achievement at 16 years of age.

LEVEL OF EVIDENCE: II

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Citation: Newborn Apgar score related to teen school performance (2011, July 26) retrieved 3 May 2024 from <https://medicalxpress.com/news/2011-07-newborn-apgar-score-teen-school.html>

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